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Abstract of the Disclosure

A method of forming a light emitting diode (LED) includes providing a temporary growth substrate that is selected for compatibility with fabricating LED layers having desired mechanical characteristics. For example, lattice matching is an important consideration. LED layers are then grown on the temporary growth substrate. High crystal quality is thereby achieved, where-  
5 after the temporary growth substrate can be removed. A second substrate is bonded to the LED layers utilizing a wafer bonding technique. The second substrate is select-  
10 ed for optical properties, rather than mechanical proper-  
ties. Preferably, the second substrate is optically  
15 transparent and electrically conductive and the wafer bonding technique is carried out to achieve a low resist-  
ance interface between the second substrate and the LED layers. Wafer bonding can also be carried out to provide passivation or light-reflection or to define current flow.

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